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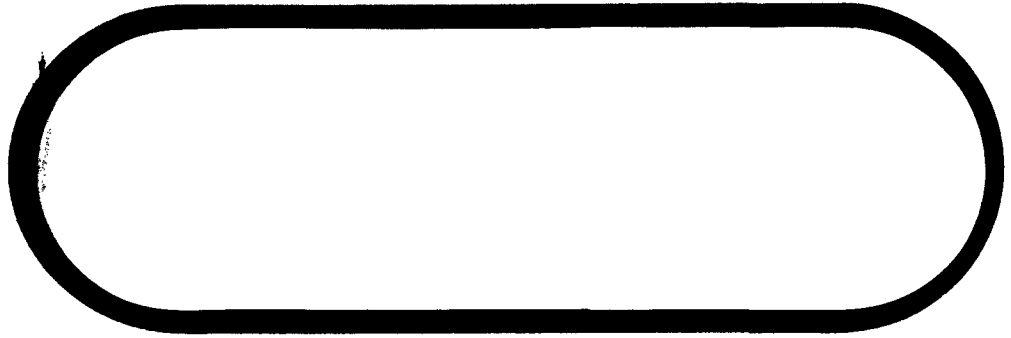


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**SEATTLE, WASHINGTON**

**BOEING AIRPLANE COMPANY**  
**SEATTLE 24, WASHINGTON**

DOCUMENT NO. D2-7316

UNCLASSIFIED TITLE ACCEPTANCE REQUIREMENTS FOR REAL PROPERTY  
AND REAL PROPERTY INSTALLED EQUIPMENT - MINUTEMAN (SNSA) - VAFB

MODEL NO. WS-133A- CONTRACT NO. \_\_\_\_\_

ISSUE NO. 48 ISSUED TO Astia

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UNIT NO. \_\_\_\_\_

ITEM NO. \_\_\_\_\_

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DATE	CHANGE INCORPORATED

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## DEFINITIONS AND ABBREVIATIONS

AFW	Air Force Weapons System Account
AGE	Aerospace Ground Equipment - All equipment required on the ground to make a weapon system, command and control system, support system, advanced objective, subsystem, or end item of equipment operational in its intended environment. This includes all equipment required to install, launch, arrest, guide, control, direct, inspect, test, adjust, calibrate, appraise, gauge, measure, assemble, disassemble, handle, transport, safeguard, store, actuate, service, repair, overhaul, maintain or operate the system, subsystem, end item, or component.
CTL	Combat Training Launch
CTLI	Combat Training Launch Instrumentation
G & C	Guidance and Control Section
GFE	Government Furnished Equipment
MGE	That AGE required to restore a system or end item to operating condition. (The MGE replaces GSE)
OGE	That AGE which is a functional part of a system and which operates with the aerospace vehicle or end item as an essential operating element thereof. (The term OGE replaces GGE)
ORT	Operational Readiness Training
PSIG	Pounds per square inch gauge
RP	Real Property
RPIE	Real Property Installed Equipment - For the purpose of this document, RP and RPIE shall be considered as those items of structures and equipment installed by the construction contractor.
SMSA	Strategic Missile Support Area
STL	Space Technology Laboratories, Inc.

**APPLICABLE DOCUMENTS**

GM-07-59-2617A      Electrical Interference Control Requirement for  
Minuteman (WS-133A)

GM-42-52-73      Electrical Grounding Criteria for Minuteman (WS-133A)

S-133-30-54      Facility Design Criteria of the CRT/CTL Maintenance  
(D2-7272)      Building (SMEA) - Vandenberg Air Force Base

S-133-11      Minuteman Model Specifications National Electrical Code,  
Latest Issue

AFPM Exhibit 58-20A      "Gas, Fluid, and Electrical Conduit Line Identification  
(Dated Oct.12, 1960)      for use in Missile and Space System"



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1.0

## SCOPE

This document specifies the acceptance requirements for completely installed systems and items of equipment of the RP and RPIE within the ORT/CTL Maintenance Building at Vandenberg Air Force Base.

2.0 GENERAL ACCEPTANCE

2.1 Acceptance of the RP and RPIE is premised upon the following:

1. New buildings shall have been completed to meet facility requirements as specified in BC Document D2-7272.

2.2 All dimensional requirements of the equipment shall have passed normal inspection.

2.3 The Base RP and RPIE are acceptable when acceptance demonstrations and inspections have been completed and all RP and RPIE have met the requirements as specified herein.

2.4 All Functional Test Reports and Inspection Reports pertaining to Real Property and Real Property Installed Equipment shall be available at the start of validation procedures.

2.5 All Validation Procedure items for which a check list item is provided shall have all test procedures and results, including preliminary checkout data, recorded on a standardized test data form.



3.0 GENERAL RP AND RPIE ACCEPTANCE REQUIREMENTS

- 3.1 Services, such as utilities, communications, security, environmental control and building maintenance shall be provided by the government during the RP and RPIE testing period.
- 3.2 Prior to tests, all indicating, measuring, regulating, or generating devices used for testing purposes, shall have been calibrated in accordance with the manufacturers specifications for calibration of new instruments, before and after performance of each test.
- 3.3 Prior to the acceptance testing specified in the following sections, it shall be demonstrated that the base web counterpoise and building grounding systems comply with the requirements as specified in STL Document GM 42.52-73 "Electrical Grounding Criteria for Minuteman (WS-133A)" and STL Specification S-133-30-54 (BC Document D2-7272).
- 3.4 It shall be demonstrated that all RPIE within the Electronic Maintenance Area, Measurements Area and the Encoder-Decoder Area shall comply with the requirements specified in GM-07-59-2617A, "Electrical Interference Control Requirement for Minuteman (WS-133A)".



- 3.5 The SMSA RP and RPIE shall have been provided in accordance with the requirements as specified in the STL Technical Criteria Document S-133-30-54 (BAC Document D2-7272)
- 3.5.1 The SMSA RP and RPIE shall have been inspected to assure compliance with drawings and specifications. Acceptance demonstrations need to be performed only on items for which acceptance requirements are specified in this document.
- 3.6 During the tests specified herein, all electrical motors shall operate at rated voltage, at rated RPM and at a current not to exceed the nameplate current, within a power regulation of  $\pm 5\%$ .
- 3.7 Electro-interference or interference on instrumentation ground wire where entering the building shall not exceed that specified in STL Document GL-07-59-2617A, with power on and all RPIE equipment operating.

4.0

**ORT/OIL - MAINTENANCE BUILDING (MSA) - ACCEPTANCE REQUIREMENTS**

The ORT/OIL Maintenance Areas will support the organizational level and the field level maintenance for Operating Ground Equipment (OGE), Maintenance Ground Equipment (MGE), Real Property Installed Equipment and the Combat Training Launch Instrumentation System.

4.1

The ORT/OIL Maintenance Building consists of the following maintenance facilities:

1. Electronic Maintenance
2. Measurements Shop
3. Encoder-Decoder
4. Material Control
5. Electrical-Mechanical Maintenance
6. Special Purpose Vehicle Maintenance
7. Airlock and Cleaning

4.2

The following RPIE is installed in the ORT/OIL Maintenance Building:

1. Environmental Control System
2. Compressed Air System
3. Monorail in the Electronic Maintenance Area.
4. Overhead Traveling Crane in the Special Purpose Vehicle Maintenance Area.
5. Commercial Power and Distribution Equipment

4.3

Environmental Control System Acceptance Requirements

The environmental control system in the building may consist of one or several subsystems required to control air temperature, humidity, and air cleanliness and to cool electronic equipment as specified in STL document S-133-30-54 (D2-7272).

4.3.1

The environmental control system shall provide one of the following classes of environmental control in each area of the ORT/CTL Maintenance Building.

1. Air Quantities:

Air quantities of the various ventilation and for air conditioning systems shall be balanced to within  $\pm 5\%$  of design quantities.

2. Class I

Temperature:  $72^{\circ} \text{ F} \pm 2^{\circ} \text{ F}$

Relative Humidity: 60% (maximum)

Cleanliness: Air filters shall have an overall average efficiency of not less than 85% on atmospheric dust as measured by the Air Filter Institute (AFI) Dust Spot Test Method.

3. Class III

Summer: Adequate ventilation.

Winter:  $70^{\circ} \text{ F. (Nominal)}$

4.3.2

The environmental control system shall be operated and tested to determine that all components produce satisfactory results and conform to the following requirements:

4.3.2.1 Maintain a Class I environment as defined in Paragraph

4.3.1 in the following areas:

1. Electronic Maintenance
2. Measurements Shop
3. Encoder-Decoder
4. Material Control
5. Airlock

4.3.2.2 Maintain a Class III environment as defined in paragraph

4.3.1 in the following areas:

1. Electrical - Mechanical
2. Tool Crib
3. Cleaning

4.3.2.3 Provide cooling air to electronic equipment in the

Electronic Maintenance Area per the following requirements:

<u>Equipment</u>	<u>No. of Outlets</u>	<u>Req'd. CFM</u>	<u>Temp. °F</u>	<u>Relative Humidity</u>	<u>Pressure at Equip. Inlet</u>
EGS-72	2	1060 (530 each)	61 ± 2	60%	4.3 in. W.G.
C 89A	1	530	61 ± 2	60%	.7 " " "
C 90B	2	1008 (504 each)	61 ± 2	60%	.7 " " "
C 91B	2	690 (345 each)	61 ± 2	60%	.7 " " "

For equipment and outlet locations see Figure A.1.1.

All cooling air to be filtered per class I environment.



4.4

**Central Compressed Air and Distribution System  
Acceptance Requirements**

4.4.1

The function of this system is to supply compressed air, from 70 to 110 psig, in the ORT/CTL Maintenance Building, to the following areas:

1. Electronic Maintenance
2. Measurements Shop
3. Cleaning Area
4. Encoder-Decoder
5. Tool Crib
6. Electrical - Mechanical
7. Special Purpose Vehicle Maintenance

4.4.2

The Purpose of the compressed air system is to supply high pressure air for operating hand tools and low pressure air for cleaning purposes.

The system consists of the following:

1. Compressor
2. Main Storage Tank
3. Distribution Lines
4. Pressure Regulators for Regulating Outflow. For location of compressed air outlets and regulators, see Figure A.1.2.



4.4.3

It shall be demonstrated that this equipment has the ability to accomplish the following, in accordance with the design requirements;

1. Maintain pressure in the main storage tank of 100 psig minimum.
2. Provide pressure regulation for outlets as specified in STL Document 3-133-30-54 (EC Document D2-7272)
3. Maintain air cleanliness that is compatible with that specified in paragraph 4.3.1 for a Class I environmental control within the following areas:

Electronic Maintenance  
Measurements Shop  
Encoder-Decoder  
Material Control

4. Limit the moisture content of the compressed air to a dew point of  $-65^{\circ}$  F.

System pressure tested in accordance with applicable codes and contract specifications.

#### 4.5

#### Monorail Acceptance Requirements

The monorail in the Electronic Maintenance Area is required to provide a capability for hoisting and transporting the N 10 A Auto-Navigator (Q&C Section) and the OTLI Section. For location of monorail see Figure A.1.3.

#### 4.5.1

It shall be demonstrated that the monorail has the ability to accomplish the following:

1. Operate freely through the entire range of travel under a full load of 1500 pounds.
2. Provide a minimum lift (vertical travel of hook) of 11' 0".



#### 4.6 Overhead Traveling Crane Acceptance Requirements

The overhead traveling crane in the Special Purpose Vehicle Maintenance area is required to provide a capability for hoisting T/E hydraulic actuators and equipment pertinent to the Mechanical - Electrical area. For location see Figure A.1.4.

4.6.1 It shall be demonstrated that the overhead traveling crane has the ability to accomplish the following:

1. Operate freely through the entire range of travel under a full load of 4 1/2 tons.
2. Provide a minimum lift (vertical travel of hook) of 17' 0" with a hoist speed capability of 25 feet per minute.
3. Completely tested in accordance with the contract specifications.

#### 4.7 Commercial Power and Distribution Equipment Acceptance Requirements

The commercial power and distribution shall provide 120/208 volts, 3 phase, 4 wire, 60 cycle electrical power to facility equipment.

4.7.1 The commercial power and distribution equipment in the ORT/CTL Maintenance Building shall be tested and shall conform to the National Electrical code. The commercial power and distribution equipment shall consist of the following:

1. Commercial Power
2. Distribution Panel
3. Circuit Breakers
4. Associated Wiring



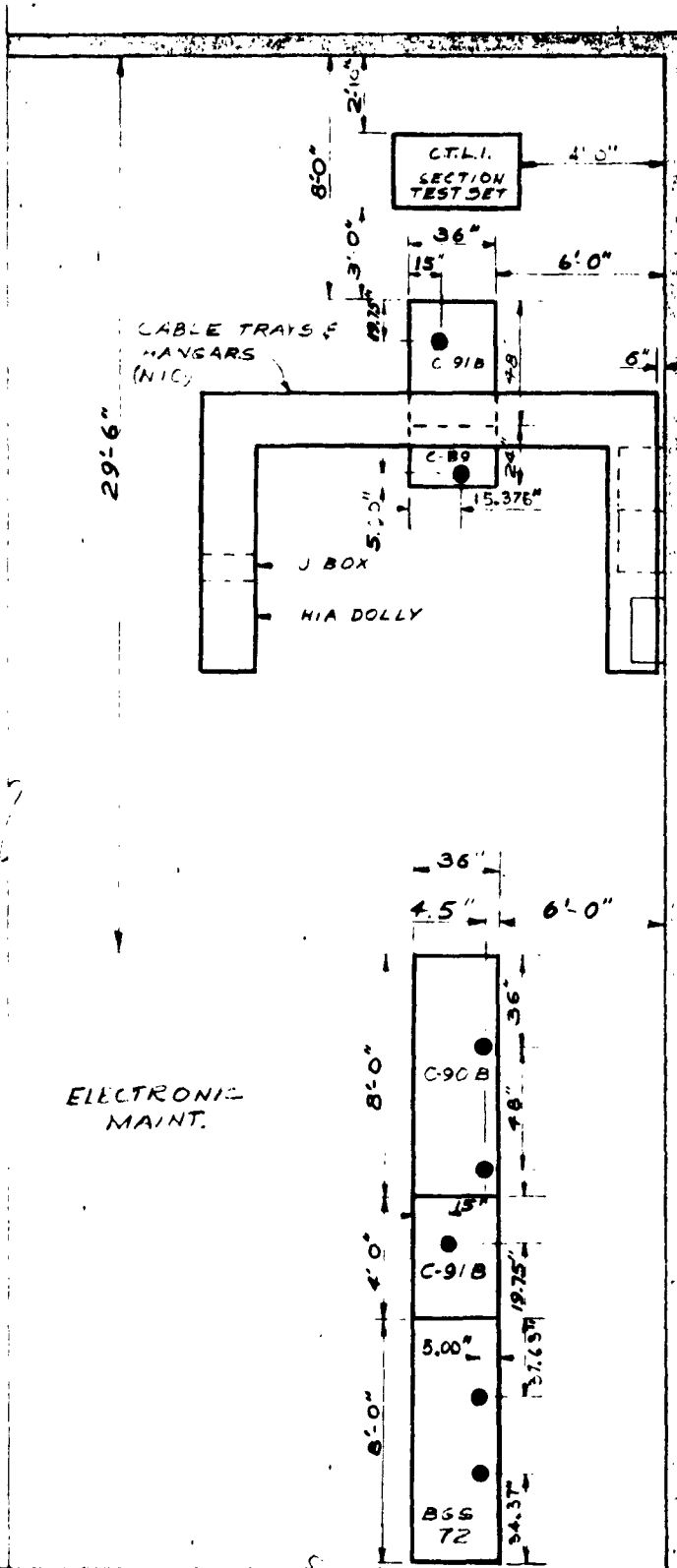
4.7.2

The commercial power and distribution equipment shall be operated and tested to determine that all components conform to the following requirements as specified in the Design Criteria Specification S-133-30-54 (BAC D2-7272):

1. Provide regulated power at full load into the building with a voltage fluctuation not to exceed  $\pm 10\%$ .
2. Properly ground all neutrals to the commercial power grounding system (installed as part of Real Property) tie point in accordance with the National Electrical Code and Design Criteria Specification S-133-30-54 (BAC Document D2-7272).

APPENDIX





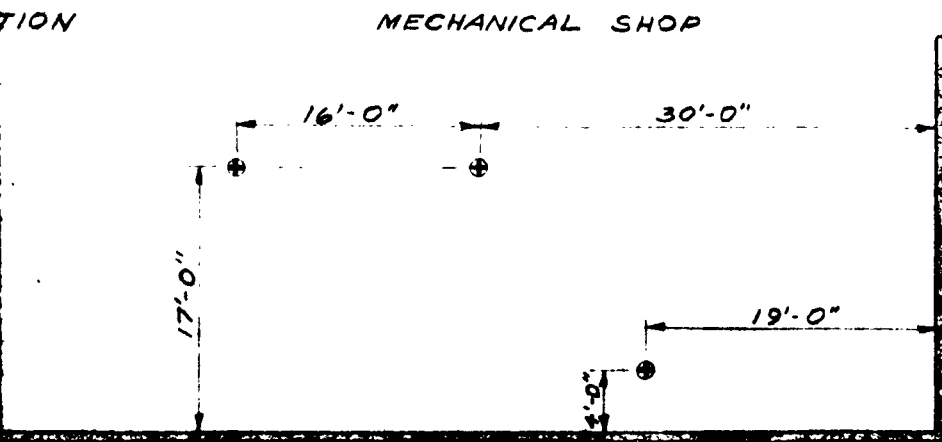
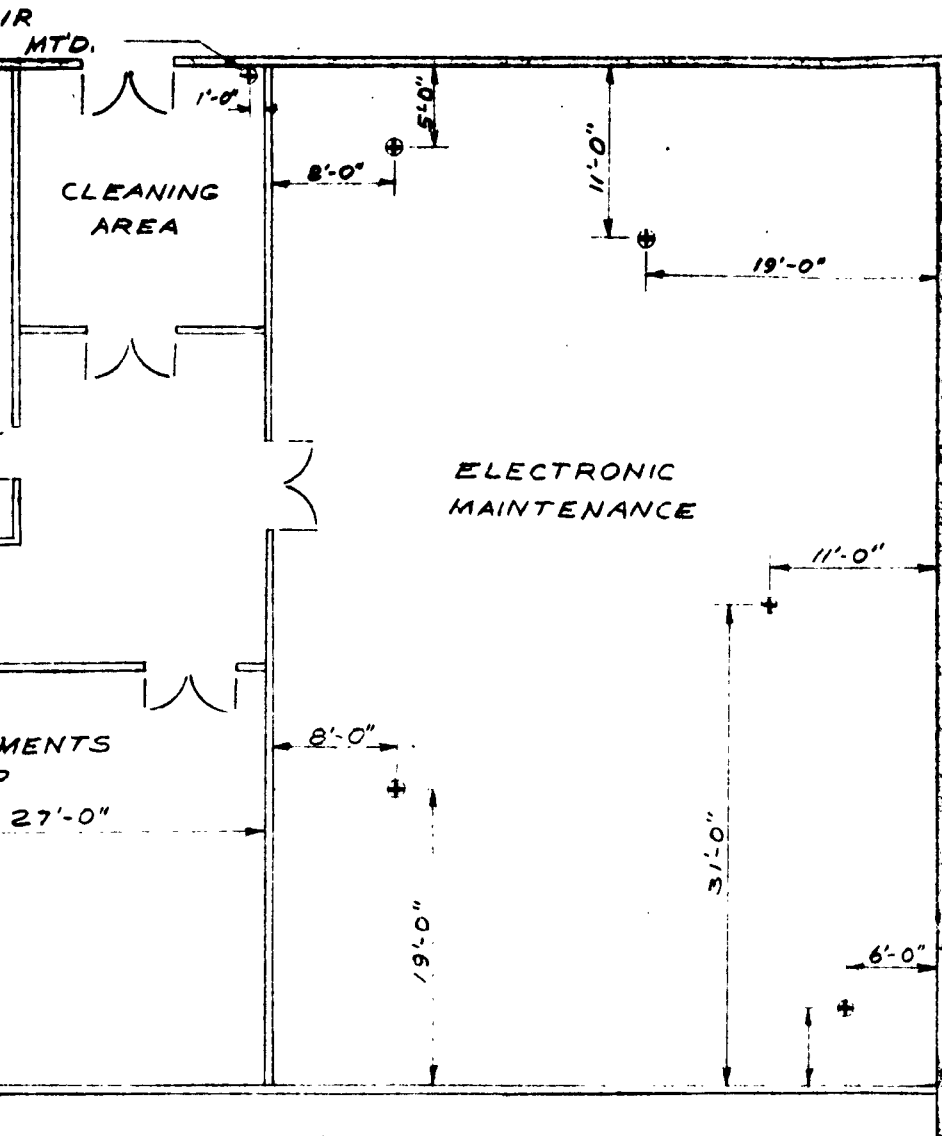
# LEGEND

- - EQUIPMENT COOLING AIR INLET

SCALE  $\frac{1}{16}'' = 1'-0''$

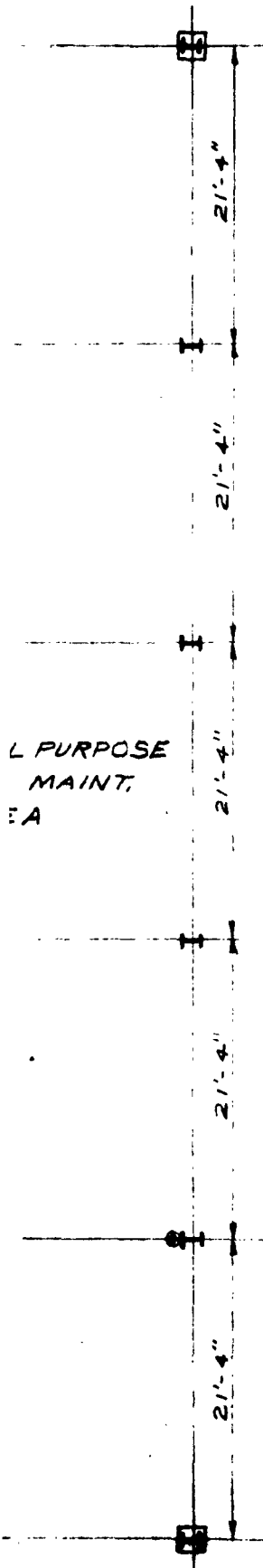
CALC	AK	5/14/1	REVISED	DATE	EQUIPMENT COOLING INLETS IN ORT/CTL-MAINT. BLD. SMSA VAFB	D2-7316
CHECK	H. L. F.	5/14/1				FIG. A.4
APPR						PAGE
APPR						14
BOEING AIRPLANE COMPANY					SEATTLE 24, WASHINGTON	





2

SPECIAL PUR  
VEHICLE MA  
AREA



LEGEND

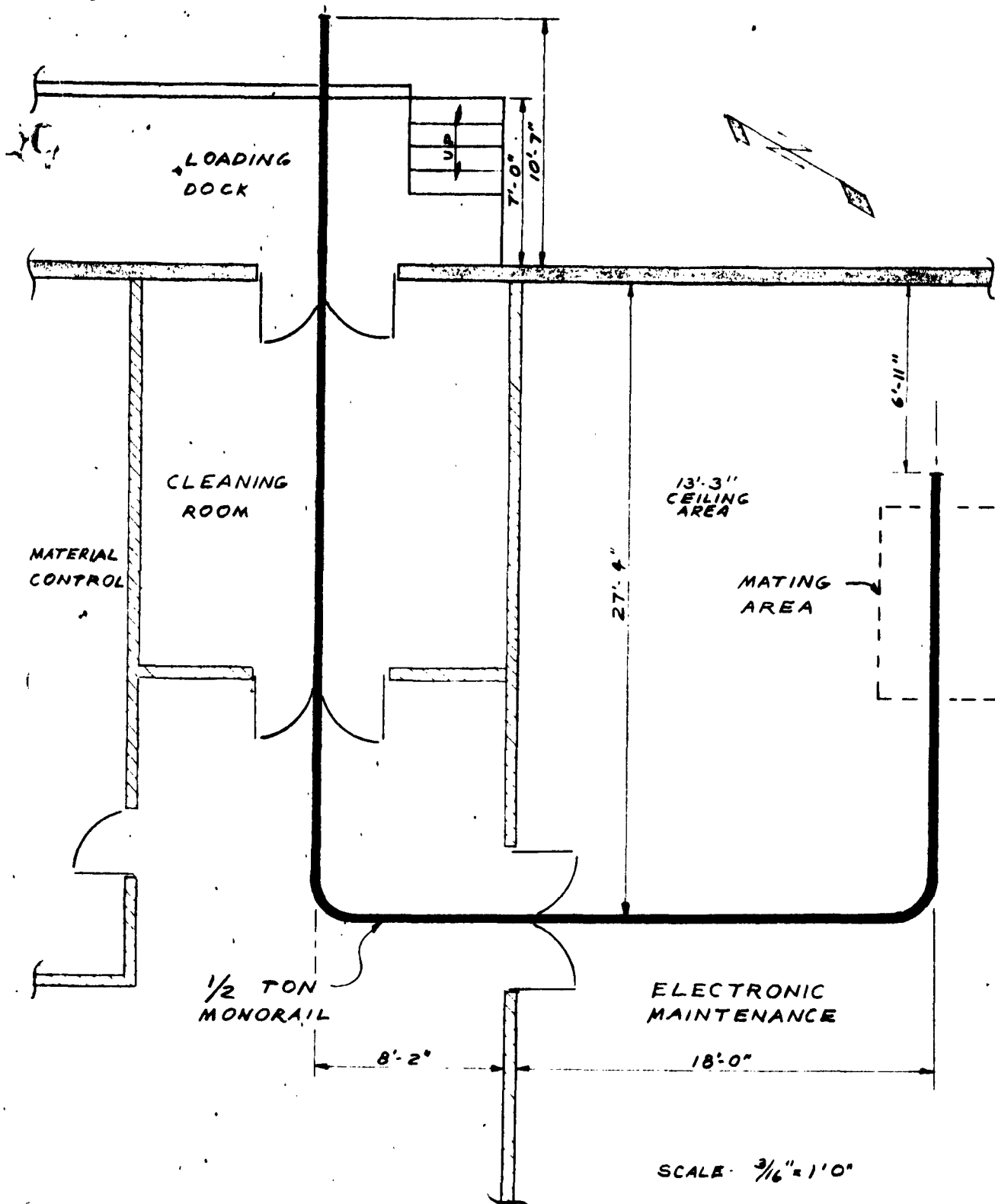
⊕ - COMPRESSED AIR  
OUTLET

NOTE.

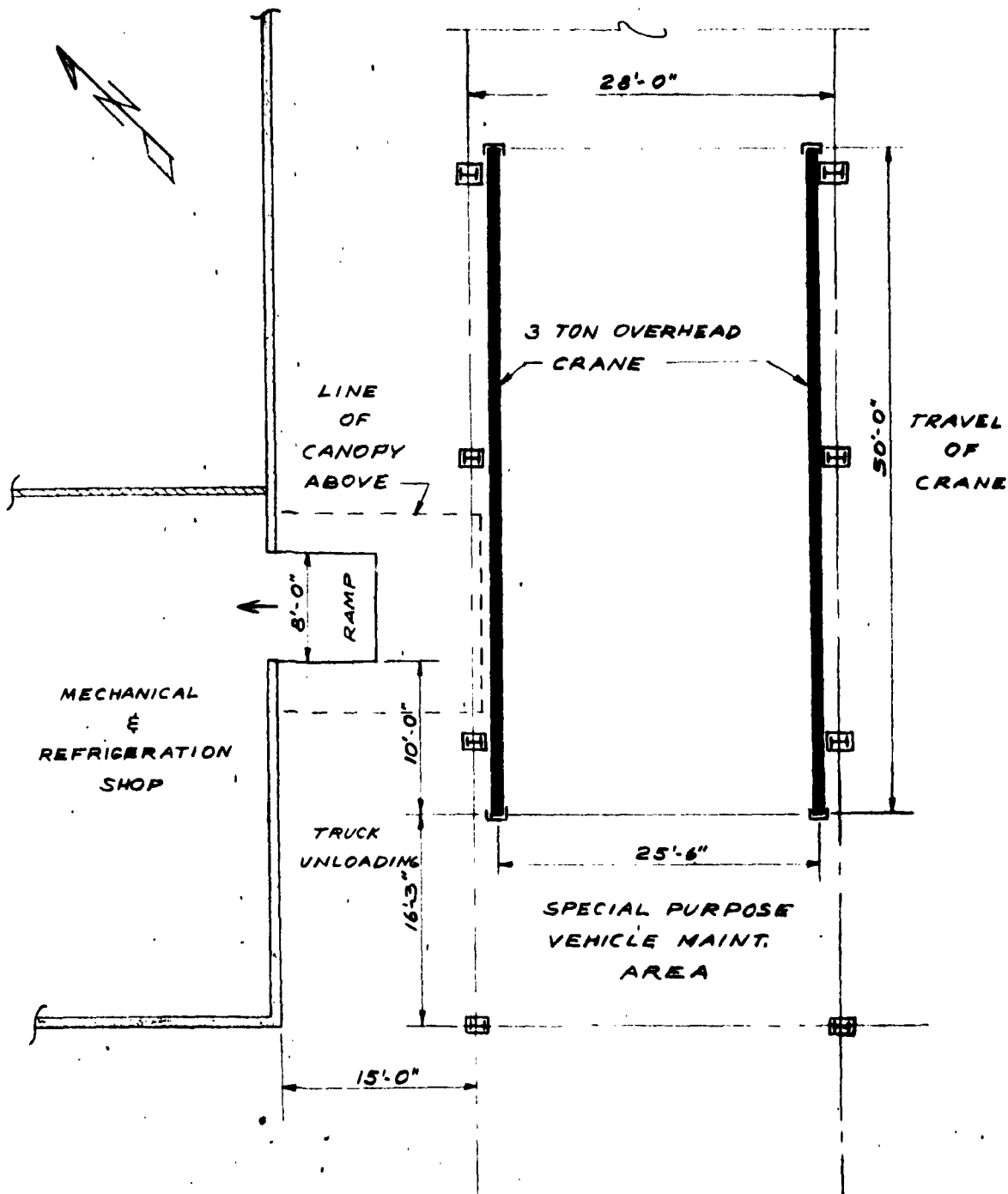
DIMENSIONS ARE APPROXIMATE  
AND SUBJECT TO NORMAL  
CONSTRUCTION TOLERANCES.

SCALE -  $\frac{3}{32}$ " = 1'-0"

CALC	A.F.	5/9/61	REVISED	DATE	COMPRESSED AIR OUTLETS	DE-7316
CHECK	H.L.F.	7/10/61			ORT/CTL MAINT. BLDG.	FILE A.1.2
APPR					SMSA - VAFB	PAGE
APPR					BOEING AIRPLANE COMPANY	15
					SEATTLE 24, WASHINGTON	



CALC	AF	5/17/6	REVISED	DATE	MONORAIL IN ORT/CTL MAINT. BLDG. SMA - VAFB	D2-7316
CHECK	W. H. F.	5/17/6				FIG A-1.3
APPR					BOEING AIRPLANE COMPANY SEATTLE 24, WASHINGTON	PAGE
APPR						16



SCALE -  $\frac{3}{32}" = 1'-0"$

CALC	AF	5/14/61	REVISED	DATE	OVERHEAD TRAVELING CRANE	D2-7316
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APPR					SEATTLE 24, WASHINGTON	